

IN THE CLAIMS

Please amend the claims to read as follows. All of the pending claims are reproduced below for the Examiner's convenience.

1. (Currently amended) A balancing vertical load device for a linear motor, to be used in combination with a vertical driving device with controlled force and positioning, comprising:
~~a motor assembly, comprising a linear motor assembly having a permanent magnet stator core, and a moving coil surrounding said stator core and being slideable in a linear motion thereto;~~
~~a digital linear array indicating the linear position of said moving coil; and~~
~~a load weight which, driven by said motor, performs a vertical movement; and~~
~~a sealed air pressure system, comprising an air cylinder, a piston gliding inside said air cylinder with low friction and being connected with said load weight, an air container,~~
~~with storing an air volume such that with a piston velocity of 2 m/s, a pressure differential created by movement of said piston during operation of said device is less than 3 percent, and an air pressure source;~~
~~wherein whereby said sealed air system balances a load of said load weight, so that precise control of force and position of a vertically moving object, as if moving horizontally, is achieved.~~
2. (Currently amended) A balancing vertical load device for a linear motor according to claim 1, wherein said linear motor assembly has a ~~feeding~~digital linear array feed back system for vertical position and force control.
3. (Currently amended) A balancing vertical load device for a linear motor according to claim 1, wherein a valve is inserted between ~~said~~an air pressure source and said air container for adjusting air pressure in said air container to modify balancing force.
4. (Currently amended) A balancing vertical load device for a linear motor according to claim 1, wherein said linear motor assembly and said sealed air pressure system are mounted on a frame, with space within said frame being used for said air container.